IMPACT ANALYSIS OF ENTERPRISE-LINKED EXTENSION PROGRAM: NYAKATONZI GROWERS COOPERATIVE UNION AND NORTH BUKEDI COTTON COMPANY

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Executive Summary

The purpose of this report is to evaluate the impact of the SPEED-supported Enterprise-Linked Extension Program (ELEP) aimed toward increasing the capacity of selected Ugandan cotton sector enterprises and enhancing cotton farmers' yields and household incomes. ELEP is distinct from most extension programs in that it is an integrated, market-driven approach to increasing small farmer incomes. The program's premise is that 1) production—in this case, cotton—will increase if there are financial incentives for farmers to improve agronomic practices; and 2) enterprises—cotton ginneries—will benefit by operating at higher capacities while directly providing extension services to farmers, the costs of which would be integrated into the enterprises' general overhead.

The key to ELEP in the cotton sector is the development of farmer loyalties toward the ginnery: because the ginnery provides extension services, farmers will sell their cotton to that particular ginnery out of loyalty—even despite better prices elsewhere. As both parties mutually benefit from this program, SPEED's assertion is that the ELEP approach is sustainable and highly effective in increasing small farmer incomes.

SPEED has carried out ELEP with Nyakatonzi Growers Cooperative Union (NGCU) in Kasese district and North Bukedi Cotton Company (NBCC) in Mbale and Pallisa districts. Overall ELEP has been successful, and with each successive cotton season awareness on high input practices and ginnery-provided extension services will increase. Farmers in both surveyed areas are realizing higher yields and incomes, and many of their neighbors and relatives are responsive to the program, as well. The vast majority of farmers who utilized high-input practices taught in extension trainings reported that the quality and quantity of cotton produced were superior to low-input plots and previous seasons' yields. Farmers of NGCU-serviced high-input plots yielded on average 90% more cotton than farmers using little or no inputs, while in Pallisa district the average difference was over 300%!

According to one participating farmer in the NGCU program, her high-input demo plot yielded 640 kg of cotton, 130 kg more than her low-input plot. With just 12,000 UGS of labor expenses, she acquired a nice profit from her venture and has realized the benefit of using high-input practices. Before participating in ELEP, this farmer did not have enough money to maintain her family: none of her four children could attend school because of her low economic standing. With last season's yield, she paid school fees and repaired her house, still having money left over to save or invest. Next season she plans to plant one acre of cotton using high-input methods.

NGCU and NBCC enterprises are also pleased with ELEP and committed to its success and sustainability, as it has helped to improve yields, encouraged people to plant cotton, as well as created and maintained business bonds with farmers. The ginneries also believe that without ELEP's "loyalty factor", they would have received less cotton this year given increased

competition levels in both regions. According to NBCC management, ELEP has been very effective and helpful from a business point-of-view:

- NBCC was completely involved and even leading the way in the establishment of ELEP;
- Because of SPEED's involvement, NBCC was forced to consider the "detailed aspects of what goes into getting a good yield": it has gotten NBCC more deeply involved in cotton production;
- SPEED wanted the program to succeed and has supported the program to that end;
- SPEED regularly monitors the program.

While ELEP has been proven a successful program with sustainable results, this report also seeks to facilitate the strengthening of the program. The survey team therefore identified the following recommendations for each enterprise:

Nyakatonzi Growers Cooperative Union

1. More emphasis should be placed on outreach programs for outlying farmers and farmers who are not primary society members. NGCU should improve its awareness campaigns and encourage trained farmers to influence neighbors to attend trainings and to invest in high inputs *before* the cotton season begins.
2. Establishing a SACCO is the best option for providing financial services. It should operate separately from but cooperating with ginnery management and marketing cooperatives, and provide both savings and loan services immediately.
3. Site supervisors, area coordinators and well trained participating farmers should follow up with adopters to ensure they are employing correct farming methods. They should also teach farmers how to procure inputs on their own. This would increase farmers' self-confidence and build greater loyalties to the extension workers and the ginnery.

North Bukedi Cotton Company

1. NBCC extension workers' performance should be evaluated. They should also be retrained to: 1) encourage farmers to save earnings; 2) visit farmers regularly to ensure they are using inputs correctly; 3) teach farmers how to procure inputs on their own; 4) encourage participating and trained farmers to reach out to their neighbors; and 5) publicize NBCC's sponsorship and commitment to the program—leaving SPEED out of the message.
2. If a SACCO is established to help farmers afford inputs from NBCC and other stockists, an awareness campaign must take place that sensitizes distrustful farmers to the benefits of credit societies and their services, as well as orients them to the inherent risks of agricultural credit
3. NBCC and SPEED should develop a communication strategy to inform farmers of ELEP's benefits. The incentive structure should be changed so that *all* farmers involved in the program receive an award or certificate for participating.

ELEP has positively demonstrated its effectiveness. This report therefore recommends it be planned as a five-year activity for each enterprise, enabling the development of significant farmer loyalties. ELEP and the level of USAID-funded support to each enterprise should be evaluated annually: program improvements can thus be made and donor funding would decrease from year to year. Eventually, the enterprises would wholly support the program out of

overhead. ELEP and similar monitoring mechanisms could be replicated in other agricultural sectors as well, including maize and coffee production.

SECTION I

Introduction: The ELEP Concept

ELEP as Concept

In the 1970s, cotton was one of the leading foreign exchange earners for Uganda. Since then, however, there has been a considerable decline in cotton yields, which is generally attributed to poor agronomic practices and lack of inputs. Most ginneries in the country operate at much less than capacity because of lowered cotton production. Yet, it is recognized that cotton can be an important earner for many small farmers—but only if they increase production through simple agronomic practices and inputs of fertilizers, herbicides, and pesticides. Although current prices may be relatively low, there is healthy market demand for Ugandan cotton. Production increases will have a significant and positive impact on farmer household income, as well as on ginneries that would be able to operate at designed capacity.

The purpose of this analysis is to test the concept and impact of the Enterprise-Linked Extension Program (ELEP) as carried out by SPEED in its work with two Ugandan cotton sector enterprises: Nyakatonzi Growers Cooperative Union (NGCU) in Kasese district and North Bukedi Cotton Company (NBCC) in Mbale and Pallisa districts. ELEP is an integrated, market-driven approach to increasing small farmer incomes. The program's premise is that 1) production—in this case, cotton—will increase if there are financial incentives for farmers to improve agronomic practices; and 2) enterprises—cotton ginneries—will benefit by operating at higher capacities while directly providing extension services to farmers, the costs of which will be integrated into the enterprise's general overhead.

SPEED's ELEP approach in the cotton sector therefore encompasses two main goals:

- To enhance cotton farmers' incomes
- To increase operating capacities of NGCU and NBCC cotton ginneries

The key to sustaining these goals is the fundamental factor of *loyalty*, namely the loyalty of cotton farmers toward the ginnery. The idea is that because the ginnery provides extension services, farmers will sell their cotton to that particular ginnery out of loyalty—even despite better prices elsewhere. As both parties mutually benefit from this program, SPEED's assertion is that the ELEP approach is sustainable and highly effective in increasing small farmer incomes.

This report assesses ELEP by identifying program strengths and weaknesses and offering recommendations for improvement for both NGCU and NBCC ginneries. This report also provides lesson learned as SPEED proposes to expand the ELEP approach to encompass more ginneries, as well as to enterprises in other agricultural sectors. The Uganda Cotton Development Organization (CDO) has also mandated that lead ginners in designated districts adopt ELEP as a means to increase cotton production in Uganda.

ELEP as Reality

The vast majority of farmers who utilized high-input practices taught in extension trainings reported that the quality and quantity of cotton produced were superior to low-input plots and previous seasons' yields—despite low rainfall. They were also satisfied with the quality of extension trainings.

From the enterprise perspective, both NGCU and NBCC are committed to institutionalizing ELEP as it has helped to improve yields, encouraged people to plant cotton, as well as created and maintained business bonds with farmers. The ginneries also believe that without ELEP's "loyalty factor", they would have received less cotton this year given increased competition levels in both regions, especially in Pallisa district.

ELEP as Success

- Overall ELEP has been successful and awareness of the program should increase each successive cotton season.
- Farmers in both surveyed areas are attaining higher yields and improved incomes, especially those who participated or were trained in the program.
- There is also enthusiastic evidence that those farmers receiving extension services are selling their cotton to the "people who provide them with inputs and services."
- The two ginneries are also content with ELEP and are committed to maintaining it.

While ELEP has proven to be a successful program with sustainable results, this report also seeks to facilitate the strengthening of the program. Two main areas for improvement in both cotton-growing regions are *communications* and *financial services*: the successful implementation of these elements will make or break this program. NGCU has an advantage because they have a decentralized system with primary cooperative societies, which make an excellent communications medium. Farmers who belong to societies are also comfortable on the whole with savings and credit cooperative societies (SACCOs), which would be the most efficient mechanism with which to provide financial services to farmers.

At NBCC, much needs to be done to improve communication networks, particularly given that Pallisa district is highly competitive.[1] Because of this more challenging environment, a formal strategy should be considered in order to project clear and consistent messages. Extension workers should also be trained on how to stay in better touch with their constituents. Financial services systems should also be put in place in Pallisa district. If a SACCO is established to help farmers afford inputs from NBCC and other stockists, an awareness campaign must take place that sensitizes distrustful farmers to the benefits of credit societies and their services, as well as orients them to the inherent risks of agricultural credit.

Interviewing Process

In March 2003, a team of three SPEED project staff and one evaluator collected data from farmers, extension workers and enterprise principals to assess ELEP's effectiveness in NGCU and NBCC-serviced districts.

[1] There are more ginneries in Pallisa than in Kasese. Two ginneries outside the district entered Pallisa last season to compete for cotton there, as well.

A total of two and one-half days were spent in the Kasese area, and 38 interviews were held to assess NGCU's extension program. Thirty-four of the respondents were farmers.

The team then traveled to Mbale to evaluate the program at NBCC. All interviews took place in Pallisa over a two-day period. Thirty interviews were held, 27 of which involved farmers.

The survey team consisted of the following individuals:

Harmony O'Rourke:	Evaluator, Chemonics International Inc.
Peter Olupot:	Enterprise Development Specialist, SPEED
Alice Mukasa:	Office Manager, SPEED
Emmanuel Acuc:	Monitoring and Evaluation Specialist, SPEED

Report Layout

The report is laid out in four main sections. Sections II and III analyze ELEP in the NGCU and NBCC contexts, respectively, and are organized in a similar fashion. They address the following issues in this order: farmer yields and incomes; inputs and financing; farmer awareness of the extension program, loyalty and suggestions for improvement; enterprise buy-in to ELEP; and finally, findings and recommendations.

Section IV provides three case studies. Two of these studies involve female farmers who benefited from NGCU's program, attaining very high yields and greater incomes this year as a result of ELEP. The third study focuses on the participation of Katira Primary School in Pallisa district that earned funds for school programming, taught children new agricultural methods, and reached out to the surrounding community.

Section V summarizes findings, recommendations and a program for the way forward.

Definitions

Participating farmer:	A farmer who participated in the extension program by producing 1 acre of cotton, ½ that was high-input (demo plot) and ½ that was low-input (non-demo plot).
Trained farmer:	A farmer who attended some or all of the extension trainings.
Untrained farmer:	A farmer who did not attend any of the extension trainings.
Adopter/Adopting Farmer:	A trained or untrained farmer who followed some or all of the high-input methods of participating farmers' demo plots.

SECTION II

Nyakatonzi Growers Cooperative Union

Nyakatonzi Growers Cooperative Union (NGCU), a limited liability entity originating under the Cooperative Societies Statute of 1991, is owned by its affiliated primary cooperative societies. NGCU was formed in 1957 to process and market cotton for farmer members of its primary cooperative societies, which are found in the districts of Kasese, Bushenyi, Runkungiri, Kamwenge and Kabarole. NGCU is one of the few unions that survived the turbulence following the liberalization of the cotton industry in the late 1980s. Most unions collapsed due to massive debt arising from mismanagement, fraud, and lack of skills to operate in a competitive environment. NGCU gins cotton and provides tractor hire services to its members and other farmers. NGCU has also instituted SPEED's enterprise-linked approach for the production and marketing of maize.

The surveys conducted in the NGCU-serviced areas were held in the following districts: Kasese, Bushenyi, Kamwenge and Kabarole, where NGCU managed 600 cotton demo plots. A total of 34 farmers were interviewed. All farmers in Kasese and Bushenyi districts reported low or unpredictable rainfall this past season; their yields are somewhat lower than those farmers living in Kamwenge and Kabarole districts who reported moderate and high rains.

A. Income Statistics

Participating Farmers

The survey team interviewed 19 participating farmers, all of whom were NGCU primary society members. Refer to Table 2.1. All 19 farmers indicated that high-input, demo plot yields were much higher than yields from low-input, non-demo plots. On average, demo plots yielded around 68.5% more cotton than non-demo plots; and, therefore, income generated by demo plots is estimated to be that much greater. It is projected that, given the average high-input yield noted below, the 600 participant farmers produced 163,200 kg more cotton collectively than they would have using low-input methods.

Referring to farmer incomes, as the price of 1 kg of cotton ranged between 400 and 650 UGS last season, the Estimated Income Range was calculated using the lowest possible price (400 UGS) multiplied by the lowest surveyed yield (300 kg per ½ acre), and the highest possible price (650 UGS) multiplied by the highest surveyed yield (840 kg per ½ acre). If a farmer yielded the maximum of 840 kg using high-input techniques and 540 kg from low-input practices, he would have earned 56% more in income. Selling his cotton at the maximum price of 600 UGS/kg, an additional 195,000 UGS would have been acquired from the demo plot.

Table 2.1. Yield and Income

	Average Yield (kg per 1/2 acre)	Yield Range (kg per 1/2 acre)	Estimated Income Range (UGS)
Demo Plot	669	300 - 840	120,000 - 546,000
Non-Demo Plot	397	200 - 540	80,000 - 351,000

Increased yields were not the only outcomes that farmers noted. They reported other observations and benefits from their demo plot cotton as well:

- Boll quality: larger, heavier, more white (fewer or no stains) than non-demo cotton
- Healthier plants
- Fewer labor costs due to minimal weeding needs
- Opportunity to spend time on other crops, also due to less weeding

While all farmers stated that their incomes increased last season, we cannot be certain their profits increased as well. Farmers may not have taken into account the cost of inputs, including chemicals and labor, when reporting incomes to the survey team. Table 2.2 outlines the average costs of inputs spent on both demo and non-demo plots. Normally, the demo plot would have higher input costs. However, NGCU, with SPEED funding, provided all participating farmers with fertilizers, herbicides, and pesticides. Therefore, expenses reported for demo plots refer mainly to labor costs. Farmers who did not pay anything for labor relied on their families to work.

Table 2.2. Expenses: Inputs and Labor

	Average (UGS)	Range (UGS)
Demo Plot	6,263	0 - 27,000
Non-Demo Plot	23,763	0 - 57,500

*figures do not include provided inputs for demo plots

Regarding technologies used on non-demo plots, farmers employed tilling by hand hoe, pesticide application, correct spacing and seed usage as instructed in extension trainings.

Trained and Untrained Farmers

Seven trained and 8 untrained farmers were interviewed. Of these 15 farmers, 12 were NGCU primary society members, but only 3 stated they learned of the extension program through that mechanism. Five farmers learned of the program from their neighbors and tried to apply some or all of the new technologies to their crops. Three farmers learned about the trainings and

Community Information Dissemination Systems

How do farming communities learn about extension services?

- Extension workers: Area Coordinators and Site Supervisors
- Public demo-plot sites, e.g. churches, schools, local government administrative centers
- Neighbors
- Relatives
- Advertising, e.g. radio, posters
- Primary cooperative societies (NGCU program only)

high input practices from NGCU extension workers, while 2 were made aware by radio announcements. Five of these farmers, however, did not use any of the new techniques because they 1) were not aware of the extension trainings, 2) planted their crops before the trainings began; 3) did not have enough money to buy inputs, and/or 4) decided to continue with traditional farming methods.

Refer to Table 2.3. Those farmers who attended some or all of the extension trainings yielded an average of 527 kg per ½ acre more cotton than those who did not attend trainings—a 50% increase. However, the demo plots noted above still obtained greater yields: an average of 142 kg more cotton per ½ acre than crops of trained farmers, a 27% difference. It is clear that the extension methods taught through ELEP are indeed increasing yields and cotton-generated income. All 7 trained farmers stated that their incomes increased this past season, while 62.5% of untrained farmers reported similar gains.

Table 2.3. Yield and Income

	Average Yield (kg)	Average Acreage	Average Yield (kg per ½ acre)	Yield Range (kg per ½ acre)	Estimated Income Range (UGS per ½ acre)
Trained Farmers	1699	2.2 acres	527	208 - 800	83,200 - 520,000
Untrained Farmers	765.5	1.2 acres	352	100 - 750	40,000 - 487,500

Table 2.4 illustrates the average costs of inputs that both trained and untrained farmers spent for this past season. As trained farmers tended to utilize at least some or all of the demo plot high input practices, their average input expenses cost nearly 11,000 UGS per ½ acre more than the inputs purchased by untrained farmers.

Table 2.4. Expenses: Inputs and Labor

	Average (UGS per ½ acre)	Range (UGS per ½ acre)
Trained Farmers	31,793	0 - 87,150
Untrained Farmers	20,893	0 - 65,000

Those farmers who did not use high input techniques relied mainly on hand hoes, pesticides and weeding to cultivate their cotton.

Income Distribution

As noted in Table 2.5 below, most farmers interviewed tended to spend their income on family expenses, which would include clothing, housing construction and maintenance, mattresses and other household items. 82% of farmers stated that their incomes were used to pay school fees, while 64.7% of farmers chose to invest their money, mainly in the form of livestock.

Table 2.5. Income Distribution

	Debt Payments	Land Rent	Invest-ment	Food	Family Expenses	School Fees	Savings
Participating Farmers	8	6	11	10	18	17	10
Trained Farmers	5	0	6	1	7	7	0
Untrained Farmers	3	3	5	0	7	4	1
Totals	**16**	**9**	**22**	**11**	**32**	**28**	**11**

It is also important to note that nearly half of the farmers rent their land. One concern these farmers had was the practice of some landlords to force tenants to sell crops directly to them, thereby earning profits from tenants' crops on top of normal rent payments. While this was not the case for any farmers interviewed, but they believe the practice is spreading.

B. Inputs and Financing

Input System

All 19 participating farmers interviewed were NGCU primary society members, and, as stated above, 80% of the trained and untrained farmers were also members. As most society members are aware that inputs are available at the primary society level, the majority of farmers interviewed bought inputs from this source. Even so, many farmers complained that inputs were not readily available or accessible, mainly due to substantial distances between farmers and stockists, as well as major delays in getting inputs on time, namely pesticides. A few farmers also admitted they did not know from where to buy inputs.

Concerning the affordability of inputs, some farmers deem them as difficult to afford. However, those who did witness the demo and non-demo plot comparison see the benefit of investing in high input practices. Refer to Table 2.6. The columns labeled "High Input Usage without NGCU" indicate if farmers would or would not purchase inputs on their own—without NGCU provisions. In terms of participating farmers, it is projected that of the 600 involved in the program, 537 would continue to use high-input practices—whether NGCU provides them or not. Even more positively, *all* trained farmers who bought their inputs out-of-pocket stated that inputs were affordable, and 86% of them will continue to use high-input practices.

Table 2.6. Input Usage

	Farmers Interviewed	High Input Usage without NGCU		Inputs Available/ Accessible		Inputs Affordable	
		Yes	No	Yes	No	Yes	No
Participating Farmers	19	17	2	7	5	5	7
Trained Farmers	7	6	1	4	3	7	0
Untrained Farmers	8	2	6	3	2	3	0
Totals	**34**	**25**	**9**	**14**	**10**	**15**	**7**

Still more outreach programs for those farmers who are not primary society members needs to be done. As indicated above, only 25% of the untrained farmers will invest in high inputs next year if NGCU does not fund them. Given the comments received during interviews and the fact that some farmers—even primary society member farmers—do not know of stockists other than NGCU, indicates that 1) there may not be enough input supply competition in the Kasese farming area, or 2) a certain level of trust exists between farmers and NGCU: farmers believe that NGCU products are sold at fair prices and are not tampered with. Because many farmers do not know exactly which inputs to purchase, or the actual cost of inputs (especially those who were provided inputs for demo plots), they will only trust NGCU as a stockist. The one issue farmers had with NGCU inputs, however, was that they were sometimes received late at important application times.

As noted above in Table 2.6, a large majority of farmers will—or will at least try to—utilize high input practices next season as taught in the extension trainings. They believe it is worth paying more up front for input expenses because the yields are much greater. The fact that less labor is needed for weeding purposes is also attractive.

Financing Inputs

As noted previously, participating farmers were provided inputs through ELEP. For those farmers who bought inputs out-of-pocket, most financed them with profits from previous season cotton sales, other crop sales such as coffee or tomatoes, and sale of livestock. Some primary society members were also given pesticides on credit.

53% of the interviewed farmers confirmed they save some of their earnings in a conventional financial institution, such as a bank, credit society or microfinance institution (or village bank). Refer to Table 2.7.

Table 2.7. Financing

	Current Savings			Savings Preference		
	Bank	Credit Society	MFI	Bank	Credit Society	MFI
Participating Farmers	11	0	2	13	9	0
Trained Farmers	1	3	1	5	5	1
Untrained Farmers	0	0	0	5	2	1
Totals	**12**	**3**	**3**	**23**	**16**	**2**

Concerning farmer preferences for savings, most admitted they would choose the financial institution that was closest to them. When leaving distance out of the equation, 23 farmers—68%—preferred to save their money in banks, primarily due to the idea that funds are more secure. Many farmers were also keen on saving with credit societies. That many farmers are cooperative society members may influence their comfort level in saving with a community-organized mechanism such as a SACCO.

According the SPEED report, "Recommendations for SPEED's Enterprise-Linked Rural Finance Intervention", a SACCO would be the best option for SPEED intervention: a SACCO branch would cost less to open, it could be set up more quickly than an MFI, and its services cater to farmers' needs more appropriately than MFIs or commercial banks. The SACCO established should be tailored to cotton farmers' needs, separate from but cooperating with ginnery management and marketing cooperatives, eventually spread out geographically to reach greater numbers of farmers, and provide both savings and loan services. Furthermore, once the SACCO is set up, farmers would have the opportunity to replicate it in outlying districts.

C. Farmer Awareness, Loyalty and Suggestions

Farmer Awareness of NGCU's Role

Of the 34 surveyed farmers, 30 were aware that the extension program was sponsored by NGCU. Eight of these 30, however, also knew of SPEED's involvement in the program. One trained farmer even thought that SPEED was the sole source of this program and was seemingly unaware of NGCU's role. Another farmer, just a few kilometers outside of Kasese and farming just off the major highway near some demo plots, said he had never heard of the extension trainings. This farmer should have been contacted by extension workers or trained farmers and encouraged to try out new methods, or to at least attend trainings and observe the demo plots. Hence, much more can be done in terms of outreach, especially to non-society member farmers.

Farmer Loyalty to NGCU

All participating and trained farmers sold their cotton to NGCU this past season; only one of these farmers was *not* a primary society member. Six of the 8 untrained farmers interviewed also sold their cotton to NGCU; these 6 were also members. The reasons for selling their cotton to NGCU were principally: 1) loyalty resulting from the extension trainings and provision of inputs, and 2) already established loyalties to NGCU through primary cooperative societies.

When asked if they would sell their cotton to a different buyer offering a higher price, only one of the participating farmers said he would. All 7 trained farmers would sell only to NGCU. Of the 8 untrained farmers, however, half reported they would sell to the highest bidder whether they received extension services or not. Yet, the majority of farmers interviewed did exude an attitude of loyalty toward NGCU: the primary society structure is a positive factor in this regard. Once NGCU reaches more non-member farmers, encouraging them to attend trainings, a more wide-spread and deeper loyalty may be achieved.

Farmer Suggestions for Program Improvement

Although some farmers were content with NGCU's extension program, most farmers noted a few issues on which they would like to see improvement. The main recommendation offered was to increase the size and outreach of the program by augmenting the number of demo plots and spreading out further into the farming community. As one participating farmer advocated, "I want them to gain as I gained." Farmers said this could also be done by improving the way NGCU builds awareness of the program in farming communities, as well as by encouraging

trained farmers to reach out to their neighbors before the cotton season begins, influencing them to attend trainings and to invest in inputs.

One trained farmer also mentioned that he needs to understand better how to apply herbicides, as well as other inputs. Even though he attended trainings, he is afraid he may have missed or forgotten certain steps in every application process. Perhaps site supervisors or well trained participating farmers should follow up with adopters such as this trained farmer to ensure they are using correct methods.

D. NGCU Enterprise Buy-In

ELEP as a Business Tool

In the interview with NGCU management, ELEP is perceived as a breakthrough program that will help increase cotton farmers' standard of living. The impact of previous extension programs was not as significant because their agents did not operate on the farmer level. ELEP has been effective in part because of the collaboration among coordinators and farmers. NGCU has also been pleased with SPEED's involvement in the program as ELEP was tailored to NGCU's needs with NGCU input: because of this, no changes to the program needed to be made midstream.

NGCU is committed to institutionalizing ELEP and has already begun this process by employing a district coordinator. Site supervisors are also NGCU society members. ELEP's overall goal is to demonstrate to farmers that utilization of proper inputs will increase yields. NGCU feels that once farmers see crop results they should be willing to buy inputs and expects that more farmers will begin to invest in this manner.

According to NGCU, SPEED helped it to compete with incoming ginneries by "bringing a reality to the farmers". "ELEP kept us ahead of the others" as farmers still sold cotton to NGCU when other ginners' buying prices were higher. NGCU also stated that many farmers do sell to NGCU primary societies because they have provided extension services: in other words, ELEP has especially helped to maintain bonds with primary society members.

To strengthen the relationship between farmer and ginner, NGCU stated that more can be done to identify farmers' needs and how to meet them. As NGCU is afraid that farmers will be tempted by price only, providing agricultural and possibly social services is very important to its continued success. For instance, NGCU would like to provide adult literacy programs during farmers' off-season. This would eventually turn ELEP into an enterprise-linked *development* program!

NGCU also addressed the issue of delayed inputs, especially to adopters. Inputs were not readily available from stockists in various towns so the prices were hiked. NGCU would like to become an agent for these inputs on behalf of both union and non-union members. NGCU would also like to use primary societies as outreach mechanisms to non-members. That way all farmers would benefit from society-level technical support, input supply, marketing, and eventually financial services, the latter of which would be linked to a financial provider.

While NGCU believes it will eventually have the capacity to support ELEP on its own, the preference is for SPEED to phase out slowly. "Adoption takes time," stated NGCU management. For one, because the weather was bad this past season, the program needs a good season to see what the greatest impact might be and if changes need to be made.

Operational Costs of ELEP

The approximate annual operating costs for the NGCU ginnery, including labor, electricity, transportation costs, and other overhead expenditures, total 720 million UGS. This past season NGCU ginned 7,500 bales of cotton, each weighing in at 185 kg. According to NGCU management, the current price at which one bale of cotton is sold is $205, or 379,250 UGS.[2]

As indicated by the grant budget prepared by SPEED and NGCU, the estimated cost of ELEP for cotton only was approximately 103,665,000 UGS for the 2002-2003 year.[3] Given NGCU's overhead expenditures noted above, the total cost of ELEP—if NGCU would have run the program without SPEED funding—would be 14% of its total operating costs.

With reference to the price of one ginned bale, if NGCU solely funded ELEP this season, the cost would have come to 13,822 UGS (4%) per ginned bale.

E. Findings and Recommendations

Findings

1. All participating farmers and trained farmers who used high input practices taught in extension trainings reported on the whole that the quality and quantity of cotton produced was superior to non-demo plot cotton and previous seasons' yields. They were also content with the quality of the extension trainings. Thus, the agricultural extension aspect of ELEP has been very successful.
2. Those farmers who did not use any new techniques did so because they 1) were not aware of the extension trainings, 2) planted their crops before the trainings, 3) did not have enough money to buy inputs, and/or 4) decided to continue with traditional farming methods.
3. 91% of the farmers surveyed were NGCU primary society members. The fact that many farmers are society members positively and significantly impacts the loyalty factor, which is the conceptual foundation and success gauge of ELEP.
4. While most farmers who witnessed the demo and non-demo plot comparison agree inputs are worth the investment, there are a few problems concerning input accessibility: 1) substantial distances between farmers and stockists; 2) delays in getting some inputs on time; 3) not knowing from where to buy inputs.
5. Many farmers were amenable to saving with a SACCO. Again, the fact that the majority of farmers are cooperative society members may influence their willingness to participate in a community-organized financial institution.
6. Farmers' reasons for selling their cotton to NGCU were: 1) loyalty resulting from the extension trainings and provision of inputs; and 2) already established loyalties to NGCU

[2] Exchange Rate of 1850 UGS = US $1.
[3] NGCU also employs the ELEP approach for maize production.

through primary cooperative societies. The majority of farmers interviewed were also aware that NGCU sponsored the extension program.

7. NGCU is committed to institutionalizing ELEP: it has helped to maintain the enterprise's bonds with primary society members. NGCU believes that without ELEP, they would have received less cotton this year, given the new ginnery competition in the area.

Recommendations

4. The majority of farmers conveyed a sense of loyalty toward NGCU: the primary society structure is a positive factor here. However, more emphasis should be place on outreach programs for outlying farmers and farmers who are not primary society members. NGCU should improve its awareness campaigns and encourage trained farmers to influence neighbors to attend trainings and to invest in inputs—before the cotton season begins.
5. Concerning financial services, a SACCO would be the best option for SPEED intervention, as it would cost less, could be set up quickly, and it caters to farmers' needs. The SACCO should be separate from but cooperating with ginnery management and marketing cooperatives, spread out to outlying farmers, and provide both savings and loan services immediately.
6. Site supervisors, area coordinators and well trained participating farmers should follow up with adopters to ensure they are employing correct farming methods. They should also ensure that farmers know what types of inputs to use, how to gauge input quality, how much inputs cost and where they can procure them on their own. This additional training would encourage farmers and build greater loyalties to the extension workers and the ginnery.

SECTION III

North Bukedi Cotton Company

North Bukedi Cotton Company (NBCC) is a private limited company incorporated in 1995 to purchase, process, and market cotton grown in Pallisa and Mbale districts. NBCC markets some of its cotton locally, but most is exported to Europe and Japan. Since NBCC's establishment, 260 distribution centers have been set up with a customer base of 78,000 farmers. The centers distribute and sell cotton seed, fertilizer, and other production inputs. NBCC owns three ginneries at Bugema in Mbale district, and Iki-Iki and Kaboli in Pallisa district. The two Pallisa district gins are the traditional roller type while Bugema is a modern saw gin. During this past cotton season, only the Iki-Iki and Kaboli ginneries were in operation.

The surveys conducted for this analysis were held in Pallisa district where NBCC managed just 300 demo plots, half the amount of NGCU. A total of 27 farmers were interviewed. As similarly evidenced in Kasese, nearly all farmers reported that rainfall was low or unreliable this past season.

A. Income Statistics

Participating Farmers

Refer to Table 3.1. The survey team interviewed 17 participating farmers in NBCC's extension program. All of these farmers were approached by NBCC extension workers to participate in the program. These farmers stated that their yields from high-input demo plots were much higher than yields from low-input, non-demo plots. On average, demo plots yielded 89% more cotton. It is projected that, given the average high-input yield noted below, the 300 participant farmers produced 127,200 kg more cotton collectively than they would have using low-input methods.

In terms of farmer income, in Pallisa district the official price of 1 kg of cotton ranged between 350 and 600 UGS last season. The Estimated Income Range was therefore between 80,500 UGS and 540,000 UGS for demo plots, and from 35,000 UGS to 283,200 UGS earned from non-demo plots. A trained farmer attaining the maximum yield in Pallisa would have earned 91% more income per ½ acre than the most successful untrained farmer—given similar selling prices.

Table 3.1. Yield and Income

	Average Yield (kg per 1/2 acre)	Yield Range (kg per 1/2 acre)	Estimated Income Range (UGS)
Demo Plot	463	230 - 900	80,500 - 540,000
Non-Demo Plot	245	100 - 472	35,000 - 283,200

Regarding observations and benefits from their demo plot yields in comparison to non-demo plot yields, farmers reported the following: 1) superior boll quality, healthier plants, and more bolls per plant—despite the drought; and 2) fewer labor costs due to minimal weeding needs.

Table 3.2 summarizes the cost of inputs spent on both demo and non-demo plots. As was the case with NGCU-financed inputs, NBCC through SPEED also provided participating farmers with fertilizers, herbicides, and pesticides.

Table 3.2. Expenses: Inputs and Labor

	Average (UGS)	Range (UGS)
Demo Plot	21,305	0 - 60,000
Non-Demo Plot	24,453	2,000 - 100,000

*not including provided inputs for demo plots

Technologies used on non-demo plots include mainly ox plowing two or three times, replicated seed and spacing techniques of demo plots, weeding and pesticide application.

Trained and Untrained Farmers

Five trained and five untrained farmers were interviewed for the ELEP survey, all of whom were aware of the current extension program. Four farmers learned of the program from their neighbors or relatives and tried to apply some or all of the new technologies to their cotton crops. Six of the 10 surveyed farmers, however, did not use any of the new techniques largely because they did not have enough money to buy inputs or decided to continue with traditional farming methods. It is important to keep in mind that since this is the first year of ELEP for NBCC, the surrounding farming community had not seen the type of previous season's results as was the case at NGCU.

Refer to Table 3.3. Those farmers who attended some or all of the extension trainings yielded an average of 229 kg per ½ acre, or 102% more cotton than those who did not attend trainings. However, the demo plots noted above still achieved greater yields: 102% more cotton per ½ acre on average than crops of trained farmers. 80% of trained and untrained farmers also reported that their incomes increased this past season due to higher yields and buying prices.

Table 3.3. Yield and Income

	Average Yield (kg)	Average Acreage	Average Yield (kg per ½ acre)	Yield Range (kg per ½ acre)	Estimated Income Range (UGS per ½ acre)
Trained Farmers	372	0.9 acres	229	83 - 380	29,050 - 228,000
Untrained Farmers	694.8	3.3 acres	113	38 - 183	13,300 - 109,800

Table 3.4 explains the average cost of inputs that all 10 trained and untrained farmers spent this past season. Average input expenses for trained farmers cost 9,700 UGS per ½ acre, nearly 6,000 UGS more than the inputs purchased by untrained farmers.

Table 3.4. Expenses: Inputs and Labor

	Average (UGS per 1/2 acre)	Range (UGS per 1/2 acre
Trained Farmers	9,700	0 - 25,500
Untrained Farmers	3,866	0 - 14,166

Technologies used included ox plowing, pesticide application and some spacing.

Income Distribution

Table 3.5 below indicates that most Pallisa district farmers tend to spend the their income on school fees and family expenses. Just over half made investments—mainly in livestock, which acts most often as a savings mechanism: many farmers planned on selling their livestock for next cotton season's input and labor costs.

Table 3.5. Income Distribution

	Debt Payments	Land Rent	Invest-ment	Food	Family Expenses	School Fees	Savings
Participating Farmers	2	0	7	2	11	15	9
Trained Farmers	0	0	4	0	3	4	0
Untrained Farmers	2	1	3	0	3	5	2
Totals	**4**	**1**	**14**	**2**	**17**	**24**	**11**

B. Inputs and Financing

Input System

According to Table 3.6 below, 82% of participating farmers will continue to invest in high input practices without provisional support from NBCC, because they have seen the benefits of such farming methods. It is therefore projected that of 300 participating farmers, 247 would continue to use high-input practices—whether NBCC provides extension services or not. However, only 30% of trained and untrained farmers said they would try to invest in inputs out-of-pocket: most believe they do not have enough funds to support such an investment. Many would like to receive inputs on credit through a financial mechanism, while others stated they would not use inputs at all if NBCC did not provide them.

About half of the surveyed farmers complained that inputs were not readily available or accessible, generally due to significant distances between farmers and stockists, as well as delays in getting inputs on time, specifically pesticides. A few farmers also admitted they did not know from where to buy inputs. As was the case for farmers in Kasese, most only trust the ginnery to provide them with correct inputs at fair prices: they believe that stockists in Mbale or Pallisa towns are not "genuine": they are afraid they will be cheated because they do not know the cost of inputs or how to assess the quality of herbicides or fertilizers. Furthermore, many farmers are

not literate and therefore cannot ensure they are procuring the proper quality and quantity of inputs.

Table 3.6. Input Priorities and Usage

	Farmers Interviewed	High Input Usage without NBCC		Inputs Available/ Accessible		Inputs Affordable	
		Yes	No	Yes	No	Yes	No
Participating Farmers	17	14	3	6	10	3	8
Trained Farmers	5	1	2	3	2	2	0
Untrained Farmers	5	2	3	3	2	2	3
Totals	**27**	**17**	**8**	**12**	**14**	**7**	**11**

Great emphasis on outreach programming needs to be built into NBCC's future ELEP endeavors. The case of inputs in Pallisa differs from Kasese in that most farmers know from *where* to procure inputs. The problem is that, as stated in the preceding paragraph, because many farmers do not know *how* to purchase inputs, they will only trust NBCC.

Financing Inputs

For those farmers who bought inputs out-of-pocket, most financed them with profits from the previous season's cotton sales, food crop sales such as maize and cassava, and sale of livestock and milk. A couple farmers also borrowed money from friends or family members.

Referring to Table 3.7, 40% of farmers interviewed save some of their earnings in a conventional financial institution, mostly with banks.

Table 3.7. Financing

	Current Savings			Savings Preference		
	Bank	Credit Society	MFI	Bank	Credit Society	MFI
Participating Farmers	7	0	3	11	4	3
Trained Farmers	0	0	0	3	2	1
Untrained Farmers	1	0	0	0	2	1
Totals	**8**	**0**	**3**	**14**	**8**	**5**

Regarding farmer savings preferences, 52% of farmers would rather save their money in banks as they assume funds are more secure there. These same farmers also believe that credit societies are not trustworthy entities. Yet 30% deemed credit societies as the best option for managing finances, because credit would be easily accessed and they tend to cater to small savings clientele. One older farmer mentioned he was part of a cooperative union when they existed in the Pallisa district, and he was happy with the savings and credit services it provided: he would like to see the return of such credit societies.

Again, referring to SPEED's report on enterprise-linked rural finance intervention, SACCOs would be the best option given implementation timing, budget factors, farmers' financial needs and the prospect for farmers to reproduce SACCOs throughout their communities. However, as many Pallisa farmers currently distrust credit societies, major education, sensitization and advertising efforts need to be built into the budget for SACCO establishment and success. The survey team also perceived an attitude of wanting handouts of inputs rather than accessing loans: many farmers assumed they would be provided with inputs from NBCC for the upcoming season. A clear and consistent message with sustainable incentives needs to be conveyed to farmers during the upcoming season's extension trainings.

C. Farmer Awareness, Loyalty and Suggestions

Farmer Awareness of NBCC's Role

Nineteen farmers were aware that the extension program was sponsored by NBCC. Two of these 19, however, also knew of SPEED's involvement in the program. Unlike NGCU's case, 5 participating farmers seem to associate the entire program with the extension workers, be it the area coordinators or site supervisors. While there are positive effects of relationships created between farmers and extension workers, it should be stressed to NBCC employees that they continuously inform the farming community that NBCC is the reason this program exists. It is imperative that farmers' loyalties extend beyond the immediate extension worker to the ginnery.

Farmer Loyalty to NBCC

94% of participating farmers and *all* trained farmers sold their cotton to NBCC this past season. Three of the 5 untrained farmers interviewed also sold their cotton to NBCC. The reasons for selling their cotton to NBCC were principally 1) NBCC is convenient—either they live near NBCC or NBCC vehicles come to them; 2) loyalty resulting from the extension trainings and provision of inputs, 3) NBCC provided seeds; and 4) they did not trust other buyers.

When questioned if they would sell their cotton to a different buyer offering a higher price, 18% of all participating farmers said they would go for the higher price. Three of the trained farmers would continue to sell to NBCC. As one farmer put it, "I cannot ruin my friendship and future for a difference in price of 100 UGS." As for untrained farmers, 60% would also consider selling cotton exclusively to NBCC—but only if they received extension services directly.

Pallisa district is much more commercialized and competitive than Kasese. Because of this factor, many farmers solely use the buying price as the determining factor when selling their cotton. However, farmers who had a background with cooperatives and also collaborate with NBCC in some capacity exhibited higher levels of loyalty. The survey team also noticed that those farmers living in outlying, rural areas tended to be much more loyal to NBCC, whereas farmers living near urban areas only focused on price. Many farmers were also concerned with the manner in which ELEP participants received prizes. These types of incentives should be reviewed for effectiveness: they may be doing more harm than good. One suggestion is to offer certificates of participation or achievement to all involved in the program instead of prizes.

Farmer Suggestions for Program Improvement

Like farmers in the NGCU program, most Pallisa district farmers recommended enlarging the size and outreach of extension services: increase the number of demo plots and trainings and extend further into farming communities. There was also a request for extension workers to visit farmers more often and on a regular basis to monitor their progress.

Five farmers also mentioned that there were not enough pesticide spray pumps in the area which results in application delays. They would therefore like to see a greater number of pumps available. Other delays mentioned were receiving technical expertise from site supervisors and inputs from NBCC on time. For instance, the application of fertilizers usually occurs in three different stages during plant growth. If a farmer is unsure as to when to apply top dressing, his crop may be adversely affected. Farmers also asserted there was a seed shortage this past season.

D. NBCC Enterprise Buy-In

ELEP as a Business Tool

The survey team also interviewed NBCC management, who was keen to start ELEP as it seemed very effective and helpful from a business point-of-view:

- SPEED wanted the program to succeed and has supported the program to that end
- SPEED constantly monitors the program
- NBCC was completely involved and even leading the way in the establishment of ELEP
- Because of SPEED's involvement, NBCC was forced to consider the "detailed aspects of what goes into getting a good yield": it has gotten NBCC more deeply involved in cotton production.
- Working with SPEED was very easy and helpful

The quality of cotton this season improved over the previous year, primarily due to different seed variety. However, because it was a very competitive year with ginneries outside of Pallisa entering the market, some farmers put water on their cotton to make it heavier: this is the worst quality cotton. Yet in general, quality was very nice due to farmers spraying for pests. NBCC estimates that 30% more cotton was produced in Pallisa district this season over last.

Due to the intense competition, the buying price was increase substantially. If there were no extension program in Pallisa and the fierce competition for cotton remained the same, the ginneries would have fought over even less cotton. Conversely, NBCC presumes that if competition were at normal levels, NBCC would have had an excellent year. This year was instead financially acceptable: just above break-even.

NBCC fully intends to use ELEP once SPEED has phased out as it has proven very beneficial: encouraging people to plant and helping to improve yields. Its commitment is evidenced in hiring a full-time expatriate to manage its ELEP operations. NBCC believes ELEP can be sustainable without outside funding once awareness and information is "institutionalized" in the

farming communities. Loyalty is very important, but NBCC needs support over the next few years in order to build up these loyalties.

When questioned about the shortage of seeds that some farmers reported throughout the survey, NBCC acknowledged that it is a problem. Seed distribution is a very difficult process. They need to be very careful not to give too much to one individual. This year NBCC plans to withhold a large quantity of seed during distribution. Those farmers who did not receive enough or any seeds would then be able to approach NBCC. However, in order for this to work, NBCC needs to know which farmers lack seeds. *This communication link is yet to be established.*

Operational Costs of ELEP

The approximate operating costs for the NBCC ginneries total 5 billion UGS per year. This past season NBCC ginned 12,800 bales of cotton, each weighing in at 188 kg. According to NBCC management, the current price at which one bale of cotton is sold is $200, or 370,000 UGS.[4]

According to the cost-share arrangement budget prepared between SPEED and NBCC for the 2002-2003 cotton season, the estimated annual cost of ELEP running just 300 demo plots was 92,475,000 UGS: NBCC shared 26% of this cost. Given NBCC's overhead expenditures noted above, the total cost of ELEP—if NBCC would have run the program without SPEED funding—would be 2% of its total operating costs. With the cost-share agreement, ELEP took up 0.5%.

With reference to the price of one ginned bale, ELEP-associated expenditures actually cost NBCC 1,860 UGS, or 1%, of one ginned bale this year. If NBCC would have received no outside funding, the cost would have increased to 7,220 UGS, or just 2% of one ginned bale.

E. Findings and Recommendations

Findings

a. All participating farmers and trained farmers who used high input practices taught in extension trainings reported on the whole that the quality and quantity of cotton produced was superior to non-demo plot cotton and previous seasons' yields despite the drought.
b. 22% of the farmers did not use any new techniques because they did not have enough money to buy inputs or decided to continue with traditional farming methods. The fact that this was the first season of ELEP for NBCC is significant because the surrounding farming community had not seen any previous season results.
c. There are a few problems concerning input accessibility in Pallisa: 1) significant distances between farmers and stockists; 2) delays in getting inputs on time; 3) not knowing from where to buy inputs; 4) illiteracy of many farmers who cannot ensure procurement of proper quality and quantity of inputs on their own.
d. Most farmers would rather save their money in banks than with a credit society or MFI, as they consider credit societies untrustworthy. However, some farmers would like to use credit societies because credit would be easily accessed and societies cater to small savings customers.

[4] Exchange Rate of 1850 UGS = US $1.

e. 30% of participating farmers seem to associate the extension program only with NBCC extension workers. While there are positive effects of relationships created between farmers and extension workers, farmers' loyalties need to extend to the ginnery as an enterprise.
f. 59% of participating farmers and *100%* of trained farmers sold their cotton to NBCC this past season because: 1) NBCC is convenient; 2) loyalty resulted from the extension trainings and provision of inputs, 3) NBCC provided seeds; and 4) farmers did not trust other buyers.
g. NBCC fully intends to use ELEP once SPEED has phased out as it has proven very beneficial: encouraging people to plant and helping to improve yields. NBCC believes ELEP can be sustainable once awareness and information is "institutionalized" in the farming communities.

Recommendations

4. Great emphasis on outreach programming needs to be built into NBCC's future ELEP endeavors. Extension workers—as key communication channels—should be *retrained* to: 1) encourage farmers to save earnings; 2) visit farmers regularly to ensure they are using correct cultivation methods (e.g. only touch weeding if using herbicides); 3) teach farmers on what types of inputs to use, how to gauge input quality, how much inputs cost and where they can procure inputs on their own; 4) encourage participating and trained farmers to reach out to their neighbors; and 5) publicize *ad infinitum* NBCC's sponsorship and commitment to the program.[5]
5. SACCOs would be the best financial services option given implementation timing, budget factors, farmers' needs and the prospect for farmers to reproduce SACCOs throughout their communities. However, significant education, sensitization and advertising efforts need to be undertaken for SACCO establishment and success.
6. As an attitude of wanting handouts and incentives (or prizes) was perceived, NBCC and SPEED should develop a communication strategy to inform farmers on how ELEP benefits *them*. The incentive structure should be reviewed for effectiveness and revised as it may be doing more harm than good: one recommendation is to offer certificates of participation or achievement to all in the program.

[5] At NBCC there is an apparent communication problem between coordinators and farmers as well. Perhaps some employees who know the local dialect should be selected as site supervisors. It takes much effort to convince farmers to adopt new technologies and doing so in the same language would be helpful. Assessing potential coordinators' interpersonal skills should also be integral in the selection process.

SECTION IV

Case Studies

A. Case Study 1: NGCU Participating Farmer

One female member of an NGCU primary cooperative society has been a farmer for over 20 years. She has grown many crops, such as beans, maize, groundnuts, cotton and some millet. In 1995 she decided to join the NGCU primary society. It was through this mechanism that she was made aware of the extension program.

As a participating farmer, she was provided with inputs and attended all extension trainings. Her demo plot yielded 640 kg of cotton. With just 12,000 UGS of labor expenses, she acquired a nice profit from her venture. The non-demo plot yielded 510 kg, but the labor expenses totaled 54,000 UGS. While still making a profit using low-input methods, she has realized the benefit of using high input practices and feels she was "wasting her time" for the past 20 years because her yields were so low. Next season she plans to plant one acre of cotton using high input methods.

Before participating in ELEP, this farmer did not have enough money to maintain her family: none of her four children could attend school because of her low economic standing. With this last season's yield, she paid school fees and repaired her house, still having money left over to save or invest. In the future, some of the money will be invested in uncompleted houses which she currently rents out. She hopes to complete the houses and install an electric pump. She will then be able to charge higher rates for renting, obtaining a larger income for her family.

She agreed with other women around her during the interview that increased household incomes help the case of women. For one, it makes it possible to invest in their daughters' education: people now know that cotton growers can get their children to school. The women also believe that increased incomes, as those received from this season's cotton crop, facilitate cooperation between husbands and wives. For instance, because of the positive yield and income results, men are more willing to allow their wives to attend workshops and trainings as they believe it will lead to even better yields and incomes.

This farmer sold all 1150 kg of her cotton to NGCU through her primary cooperative society. She firmly stated that she will always sell her cotton to NGCU because they have enabled her to educate her children.

B. Case Study 2: NGCU Trained Farmer

Another female farmer had noticed the methods used on her neighbor's maize demo plot and inquired about them. When the neighbor's site supervisor visited, she took the initiative to ask how she could also be a part of such a program. At that time she was made aware of NGCU trainings and encouraged to attend. She indeed came to all high-input trainings.

In order to finance the required inputs, she requested a loan of 150,000 UGS from a womens' MFI. As she did not know from where or what kind of inputs to purchase, she gave the money to the site supervisor who then bought them for her. Everything she learned from the trainings she replicated on her own crop, and she consistently invited the site supervisor to confirm she was following proper procedures.

She planted one acre of high-input cotton, which yielded 1,500 kg. She sold all of her cotton to NGCU for 500 UGS/kg, giving her a total income of 750,000 UGS. Total labor expenses for planting and weeding added up to 37,000 UGS. Given the labor expenses and payment of the loan, her total profit on this past season was about 562,000 UGS. Last season, she only yielded 300 to 500 kg/acre; this year's yield, which occurred during a dry season, resulted in a minimum increase of 200% over the prior season! The price of cotton this past season was also greater than in earlier years.

With her earnings, the farmer paid her land rent, paid off her debt to the MFI, bought food for family consumption, invested in chickens, paid for school fees and uniforms, and put the rest into savings. With these cotton profits she hopes to start another small enterprise in selling chicken eggs. Eventually she would also like to buy her own land.

As stated above, the farmer sold all of her cotton to NGCU. She mentioned that from what she has observed in her farming community and from what she has achieved herself, she is convinced that farming techniques will only get better—because of NGCU's assistance. When asked if she would sell to another ginnery or buyer if the price offered was greater than that of NGCU, she confirmed the offer would not be accepted. In fact, this very situation occurred not long ago and she rejected the buyer. She will only sell her cotton to NGCU.

B. Case Study 3: NBCC Participating School and Untrained Farmer

The Katira Primary School in Pallisa district was approached by an NBCC Area Coordinator to participate in the extension program, believing that a school would be a good site for outreach to the surrounding community. The school was most interested as it had land available, sought practical agricultural training for the students as most of them will become farmers, and the money earned from the cotton sales could be used to buy food for the children during school hours. The agricultural teacher, who was in charge of the program at the school, said the plots gave a good comparison between new and traditional farming methods and outcomes.

Katira Primary School staff approached the extension work as an extracurricular activity for the students. Children belonging to levels P4 through P7 were involved and did all of the work. Only for plowing and holidays did the school hire laborers. The school staff also mentioned that at each training or field day, over 100 community members attended. In fact, an untrained farmer later interviewed stated that as a school chairperson and father of seven children who attend the primary school, he has seen the difference in yields from both demo and non-demo plots. While he did not attend any trainings or use high input methods this year, he and his children will use the new farming techniques for the upcoming cotton season.

The school demo plot yielded 450 kg while the non-demo plot yielded 151 kg. Their cotton was sold two times to NBCC Iki-Iki ginnery: first, 324 kg were sold at 400 UGS/kg, and the rest were sold later at 500 UGS/kg. This earned the school 268,100 UGS. With minimal labor expenses, the school's profit came to approximately 225,000 UGS. When asked if they would sell to a higher bidder for their cotton, both school staff and the agricultural teacher said they would continue to sell to NBCC because they have given them assistance.

Seeing the monetary and educational benefits, the school would like to expand to 2 acres of high input cotton. However, they are afraid they will not be able to afford all of the required inputs and would like NBCC to subsidize them again. They also request that because their plots involve many people—students, staff, teachers and community members—that more than one site supervisor conduct the trainings at one time.

SECTION V

Conclusions and Recommendations

A. Summary Findings and Conclusions

The purpose of the surveys and this report was to assess the impact of the SPEED-supported ELEP approach aimed toward: 1) increasing the capacity of NGCU and NBCC ginneries; 2) creating or strengthening loyalties between cotton farmers and the enterprises; and 3) increasing farmers' yields and household incomes. The summary findings and conclusions, as developed by the survey team, are as follows:

1. The loyalty of farmers is very strong at NGCU with farmers promising to sell their yields to the "people who provide them with inputs and services". This seems to be enforced by primary societies to which many farmers belong. At NBCC, which resides in a more commercialized area, there were cases of prices being a determinant as to whom the farmers would sell their cotton. However, farmers who had a background with cooperatives and/or a current relationship with NBCC exhibited higher levels of loyalty.
2. The flow of communication and thus awareness of the extension services provided was very evident at NGCU. This may be attributed to the primary society structure, as well as the very effective team of district and area coordinators at NGCU.
3. NGCU participating farmers were very knowledgeable on the use of high input practices and were very enthusiastic about their results. Some farmers who were trained even made their own demo and non-demo plots! More farmers are now willing to try out high input practices because they have witnessed the results from demo plots.
4. Both the NBCC and NGCU coordinators should train farmers well in the use of inputs especially fertilizers, herbicides, and pesticides. Farmers should learn to identify which is which and how they are applied. More emphasis is needed in this regard at NBCC. Herbicide use in Pallisa last season is questionable as farmers still weeded up to three times in the demo plots, whereas in Kasese farmers only touch weeded in their demo plots.
5. Financial service linkages are currently lacking emphasis in ELEP trainings, especially in Pallisa. If farmers do not save earnings, they cannot afford inputs beyond pesticides. As cooperative societies do not currently exist in Pallisa, farmers do not have the same level of confidence with SACCOs as Kasese-area farmers do. Pallisa farmers' attitudes also show they are ready for more handouts—and not ready for requesting loans to *purchase* inputs.
6. Both NBCC and NGCU need to work harder on creating awareness. The ELEP program needs to motivate farmers, especially in Pallisa. Farmers there, in general, were less enthusiastic about the program than those in Kasese.
7. Establishing loyalty, or business bonds, is less of a problem in Kasese due to the primary society structure: ELEP serves to strengthen this structure. In Pallisa, the loyalty can only be built by training farmers and communicating that NBCC is the sponsor and supporter of this program. The end goal is that these farmers will appreciate NBCC's efforts when they realize an increase in production and income.

Overall ELEP has been successful, and with each successive cotton season awareness on high input practices and ginnery-provided extension services will increase. Farmers in both surveyed areas are realizing higher yields and incomes, and many of their neighbors and relatives are responsive to the program, as well. NGCU and NBCC are also pleased with ELEP and committed to its success and sustainability.

B. Summary Recommendations

Nyakatonzi Growers Cooperative Union

7. More emphasis should be placed on outreach programs for outlying farmers and farmers who are not primary society members. NGCU should improve its awareness campaigns and encourage trained farmers to influence neighbors to attend trainings and to invest in high inputs *before* the cotton season begins.
8. Establishing a SACCO is the best option for providing financial services. It should operate separately from but cooperating with ginnery management and marketing cooperatives, and provide both savings and loan services immediately.
9. Site supervisors, area coordinators and well trained participating farmers should follow up with adopters to ensure they are employing correct farming methods. They should also teach farmers how to procure inputs on their own. This would increase farmers' self-confidence and build greater loyalties to the extension workers and the ginnery.

North Bukedi Cotton Company

7. NBCC extension workers' performance should be evaluated. They should also be retrained to: 1) encourage farmers to save earnings; 2) visit farmers regularly to ensure they are using inputs correctly; 3) teach farmers how to procure inputs on their own; 4) encourage participating and trained farmers to reach out to their neighbors; and 5) publicize NBCC's sponsorship and commitment to the program—leaving SPEED out of the message.
8. If SPEED considers investing in SACCOs, a campaign to educate and sensitize Pallisa farmers needs to be undertaken in order for the SACCO to succeed and spread into farming communities.
9. NBCC and SPEED should develop a communication strategy to inform farmers of ELEP's benefits. The incentive structure should be changed so that *all* farmers involved in the program receive an award for participating.

One Overall ELEP Recommendation

One word of caution as ELEP approaches solidify farmer-to-enterprise loyalties is that farmers should not *blindly* trust all ginnery decisions and services. There is a fine line between 1) fair, two-way business bonds and 2) the manipulation of those bonds and uninformed clientele. While NBCC and NGCU motives for ELEP are genuine, it is very important certain boundaries between farmer and ginner be maintained.

C. Program for the Way Forward

This report recommends ELEP continue with USAID-funded project support for a total of five years for each enterprise. This support would enable the enterprises to develop significant farmer loyalties. One suggestion is to structure the program with three areas of support:

1. Input (demo-plot) Subsidies: the amount of donor-funded support for this aspect of ELEP would decline from year to year until, in year 5, no support is offered.
2. Technical Assistance in Training and Follow-up Activities: financial support for these activities would evolve over time, but a 5-year funding commitment is recommended.
3. Monitoring ELEP Impact and Instruction: with donor-funded support over 5 years, ELEP should be evaluated annually and monitoring instruction provided to each enterprise for continued improvement and sustainability.

In summary, ELEP and the level of financial support to each enterprise should be evaluated annually: program improvements can thus be made and outside funding would decrease from year to year. Eventually, NBCC and NGCU would wholly support the program out of their overhead budgets.

If SPEED is extended, it is recommended the project work with NGCU and NBCC to provide financial services to their surrounding farming communities. To compliment this effort, either Uganda IDEA or APEP should continue providing agricultural extension services as a means to further enhance cotton production. Similar mechanisms could be replicated with other agricultural enterprises instituting ELEP.

ANNEX I

Consultant Scope of Work

Analysis of Enterprise Linked Extension Program (ELEP) at Nyakatonzi Growers Cooperative Union (NGCU) and North Bukedi Cotton Company (NBCC)

Background

The SPEED project is charged with increasing the flow of capital and loans to the SME sector. To accomplish this, SPEED has adopted a sector based business development approach in the belief that funds will flow more easily to businesses that are profitable and have good prospects of surviving normal business cycles. SPEED integrates its activities in the cotton sector with the USAID funded IDEA Project to provide appropriate technical assistance in developing of extension services. Programs that provide opportunity for small farmers, while also spreading market and production risk, have been formulated for the cotton sector. While SPEED's involvement is limited, the project does provide assistance to particular enterprises that have the potential of reaching a large number of farmers, have export potential, or are closely linked with financial institutions cooperating with SPEED in either the DCA program or through innovative leasing programs.

Nyakatonzi Growers Cooperative Union (NGCU) is a limited liability entity set up under the Co-operative Societies Statute of 1991 and is wholly owned by the affiliated primary cooperative societies. It was formed in 1957 to process and market cotton and coffee for farmers organized into member primary cooperative societies. The members of NGCU are found in the districts of Kasese, Bushenyi, Runkungiri, Kamwenge and Kabarole. NGCU is one of the few unions that survived the turbulence that followed the liberalization of cotton and coffee industry in the late 1980s. Most Unions collapsed under the weight of massive debt arising from mismanagement, fraud, and sheer lack of skills to operate in a competitive environment. NGCU gins cotton and provides tractor hire services to its members and other farmers.

North Bukedi Cotton Company (NBCC) is a private limited company incorporated in Uganda in 1995 to buy, process and market cotton in Pallisa and Mbale districts. Since the establishment of NBCC as a private limited company, 260 distribution centers have been set up with a customer base of 78,000 people farmers. The centers distribute and sell cotton seed, fertilizer, and other production inputs. NBCC owns three ginneries at Bugema in Mbale district, and Iki-Iki and Kaboli in Pallisa district. Two of the gins are the old traditional roller type while one is a modern saw gin. NBCC markets some of its cotton locally, but most is exported to Europe and Japan.

NBCC and NGCU requested SPEED assistance in providing technical assistance for the development and establishment of extension services not only to assist farmers in improving cotton yields, but also to effectively double crop their land as well. These services were provided in the year 2002.

Rationale

In the 1970s cotton was one of the leading foreign exchange earners for Uganda. During the 1969/70-season cotton production reached a peak of 467,000 bales. However, since deregulation and the corresponding collapse of the Government of Uganda agricultural extension services, there has been a constant decline in yields of cotton with current production dropping to an average of around 100,000 bales. The loss in production has been mainly attributed to poor agronomic practices and lack of inputs such as fertilizers and herbicides.

Most ginneries in the country, including those owned by NBCC and NGCU, have found themselves operating at much less than capacity because of lowered production of cotton. Still, it is believed that cotton growing can be an important earner for many small farmers if they can learn to increase production through simple agronomic practices and minimal inputs of fertilizers, herbicides, and pesticides. Cost of land and labor is virtually the same no matter what the production, and early trials have indicated as much as a threefold increases when proper farming practices are followed. Although current prices may be relatively low, there is strong market demand for Ugandan cotton and production increases of even a portion of this magnitude will have a major beneficial impact not only on the farmers, but on the ginneries as well by getting their operation up to designed capacity.

NGCU and NBCC requested SPEED's assistance in developing an extension service that would not only be able to assist farmers in improving cotton yields, but also effectively double crop their land as well. A unique feature of the extension service is that it is entirely enterprise linked, as extension workers are direct employees of NGCU and NBCC. Extension service operating costs are embedded in the overhead expense of the union and the company respectively. NGCU is in an area that lends itself well to double cropping and a maize program was instituted there as well as a cotton program. NBCC management has bought into the program fully as evidenced by the company hiring a full time expatriate to manage and implement the extension program. Also, the Uganda Cotton Development Organization (CDO) has mandated that lead ginners in designated districts of Uganda will adopt ELEP as a means to increasing cotton production in the country.

SPEED, SPEED evaluators, and USAID BDS specialists all believe that the ELEP approach is highly effective in increasing net incomes amongst small farmers. However, it is important that this be verified by an independent analysis that will also identify weaknesses in the program and offer recommendations for improvement for replication.

ELEP is an integrated, market driven, approach to increasing smallholder income. The underlying premise is that farm production and efficiency will only increase if there is financial incentive for farmers to improve agronomic practices, and that enterprises, in this case ginneries, will benefit directly by providing extension services to farmers with the cost "embedded" in the general overhead of the enterprise.

This theory needs to be tested through a comprehensive analysis of the NGCU and NBCC experience.

Tasks

- Develop survey questionnaires and conduct surveys for 3 distinct groups at both Nyakatonzi and NBCC: 1) Those with demonstration plots; 2) Those without demonstration plots but who attended all trainings during the season; 3) Those with no demonstration plots and who did not attend any of the training.
- Conduct sample surveys of farmers working with or near NBCC and Nyakatonzi
- Analyze survey results.
- Produce 2 or 3 case studies, analyzing impact in more detail on 2 or 3 farmers.

Information sought includes the following:

- Assess impact of demonstration plots
    - Determine number of demo plots for the most recent cotton crop at each of the two locations
    - Compare the yields (production levels), gross incomes, expenses, and net incomes of the demo plots vs. the non-demo plots of the farmer participants
    - Determine overall production/financial impact on district/enterprise
- Determine the effectiveness of the training programs
    - Report numbers of participants in every training program
    - Determine level of loyalty of farmers to the enterprise as a result of ELEP
    - Determine other services, or improvements in services, sought by farmers
- Analyze factors related to financial services
    - Determine source of funds for inputs for demo farmers/adopters
    - Determine disposition of funds generated through increased production/income
    - Determine adequacy of availability of financial services
        - Are financial services appropriate?
        - Provide recommendations for changes/improvement
- Assess adequacy of input system
    - Determine availability of inputs to typical village farmer
    - Provide recommendations for improvement in supply systems
    - Assess level of competition amongst input suppliers
- Determine level of commitment of enterprise(s)
    - Determine level of "buy-in" by the enterprise and level of commitment for continuation
    - Report changes and improvements enterprises have instituted in their ELEP system
    - Determine cost of the program as a % of total operating cost and as a per unit (bale ginned) cost
    - Provide an assessment of the enterprises opinion of ELEP as a business tool
- Recommend changes in the program

Deliverables

A detailed report covering all of the above plus an in depth analysis of the ELEP system with recommendations for improvement, determination of effectiveness, and a program for the way forward.

Level of Effort
A total of 16 days will be required for this assignment:

Travel to/from Uganda:	3 days
Work in-country:	9 days
Work in U.S. for report writing:	4 days

Timing
Consultant will arrive in Kampala on or about March 16, 2003 and will depart on or about March 27, 2003. The report is to be completed by April 18, 2002.

ANNEX II

Team Member Report

Alice Mukasa

ELEP Observations and Comments:

1. In NBCC there is a communication problem between the coordinators and farmers. It is recommended that the coordinators should know the local dialect to identify better with the farmers. It takes a lot to convince farmers to adopt the new technologies and it would be good if the coordinators interpersonal skills were considered in the selection process.

2. Both the NBCC and NGCU coordinators should train farmers well in the use of inputs especially fertilizers, herbicides, and pesticides. Farmers should learn to identify which is which and how it is applied. More emphasis is needed with NBCC. The herbicides use last season in Pallisa, is questionable since farmers still had to weed up to 3 times in the demo plots, whereas in Kasese there was only touch weeding in all demo plots.

3. Much emphasis has to be put on the financial services linkage. Whereas in Kasese the farmers have societies and associations they can access to get credit, in Pallisa such societies do not exist and the farmers do not have trust in them. The attitude of the farmers in Pallisa still shows that they still want more of handouts than getting loans. Regardless of the use of inputs or not Pallisa farmers will continue growing cotton but will not have increase in income.

4. Both NBCC and NGCU need to work harder on creating awareness. The ELEP program needs to work hard on motivating the farmers. A case to put forward is the farmer in Kasese who was never trained and had never heard of the program whereas he was just by roadside and had demo plots near his land but did not have the curiosity to find out the differences in his farming/production and those of the others. A comment from a farmer in Pallisa, the farmers are unyielding to change much as they see the good of the program and have less enthusiasm for the program unlike those of Kasese.

5. Loyalty for business bonds is less of a problem in Kasese because of the society structure in existence. Whereas in Pallisa the loyalty can only be built on training the farmers in the new technologies and then will appreciate NBCC's effort when they realize increase in production and hence their incomes.

ANNEX III

Team Members' Report

Peter Olupot and Emmanuel Acuc

Findings

The purpose of the field visit was to assess the impact of SPEED supported ELEP approach amongst cotton farmers and on the ginnery**.** A sample of farmers at/around NGCU and NBCC were interviewed. Most of in depth findings will be in the evaluators report.

- There were significant increments in yields due to high input practices, up to 5 times in some cases especially at Nyakatonzi where the rains were good. The drought in some parts of Pallisa led to some cases of low yields.

- The loyalty level of farmers is very high at NGCU with farmers promising to sell their yields to the "people who provide them with inputs and services" (ginnery), this seems to be enforced by the primary societies to which they are members being members of Nyakatonzi. At NBCC which is more commercialized there were cases of prices being a determinant as to whom the farmers would sell their cotton, however farmers who had a background with cooperative at NBCC exhibited higher levels of loyalty.

- The flow of communication and thus awareness of the extension service provision was very evident at NGCU this could also be attributed to the primary society and the team of area coordinators at NGCU.

- The demo holders were very knowledgeable on the use of high input practices and were very enthusiastic about its results. Some few farmers who were trained made their own demo and non-demo plots.

- More farmers are now willing to try out high input practices because they have witnessed the results from demo plots.

- Overall the inputs are available and easily accessible to the farmers.

Comments

The program has been successful and with each successive cotton season awareness on high input practices and extension services by the ginnery will increase.

More training and field days at NBCC will increase awareness and increase farmer loyalty to the ginnery. The potential for increased "business bonds" (loyalty) is evident at NBCC; more communication needs to be carried out between the ginnery and the farmers to realize this.